INFORMATION LINK

Information Technology Department

April 2000 | A source of information for our customers | Volume 100, Issue 2

Administrative Services

YEAR 2000 WRAP-UP

Larry Lee

The Year 2000 rollover occurred with hardly a problem. As the rest of the world watched fireworks and partied, IT professionals were at their workstations, checking hardware and software to ensure that everything ran as normal. The State of North Dakota did not experience any outages related to Y2K.

The second "Year 2000" related problem date was February 29 or Leap Day as it is known. No outages were experienced on this day either.

I am frequently asked whether Y2K was over-hyped or just a scam to sell new computers. My answer is no, it was not over-hyped nor was it a selling tool. Had nothing been done, there would have been numerous problems. I also tell them that Y2K was not an extremely difficult project, but was time consuming and involved a lot of people. There were hundreds of tests performed and even more vendor and business partner checks that needed to be done.

But wait, Y2K is not really over yet! There is still the end of the year when we go from day 365 to 366 to consider. Some computer systems handle dates using the Julian system (1 through 365) for the day of the year and those systems must account for the extra day in the year. However, if January 1 and Leap Day are any indication, there shouldn't be too many problems come this December 31.

INFORMATION TECHNOLOGY DEPARTMENT (ITD) SERVICE RATE REDUCTIONS TURN BACK $1,825,920 TO STATE AGENCIES

Mike Ressler

Effective July 1, 1999

When ITD published budget rates in April of 1998, disk storage rates were 2 cents per track. With increased volume and a decrease in the cost of disk, I am pleased to announce the following rate reduction effective on the July Data Processing Billing, distributed in August.

	Old Rate	New Rate
Disk Storage	2 cents per track	1 cent per track

Based on current usage, this reduction in disk storage will save state agencies $41,480 per month or $995,520 for the 1999-2001 biennium.

Effective October 1, 1999

ITD is constantly looking at ways to provide our services for less money without reducing the quality of the finished product. When we are successful, we lower the billing rate for the appropriate service. I am pleased to announce the following rate reduction effective on the October Data Processing Billing, distributed in November.

	Old Rate	New Rate
LAN Back-up Storage	5 cents per megabyte	3 cents per megabyte

This service backs up agency servers and personal computers to ITD disk storage devices. ITD charges the above monthly fee per megabyte of data stored in a secure environment along with off-site storage and disaster recovery practices.

Based on current usage, this rate reduction will result in a savings to state agencies of $9,600 per month or $201,600 for the 1999-2001 biennium.

Effective November 1, 1999

In June of 1998, ITD began a project of reviewing all software products residing on the enterprise server (mainframe). The objective was to remove those products that provide duplicate functionality and are not essential to providing agency services. Subsequently, we have removed several products saving $236,000 per year in maintenance fees. As a result, we are reducing the enterprise server CPU rates from 98 cents to 95 cents effective on the November Data Processing Billing. This reduction will save state agencies $20,100 per month or $402,000 for the remaining of the 1999-2001 biennium.

We are in the process of removing additional products, but there is a migration period necessary before maintenance can be canceled. We will continue to review software products to determine their need and as we are successful in removing them, we will pass these savings on to you, our customers.

(continued on next page)

INSIDE THIS ISSUE . . .

The rates were reduced as follows:

	Old Rate	New Rate
IBM 9672 Batch CPU	.98 / second	.95 / second
IBM 9672 CICS CPU	.98 / second	.95 / second
IBM 9672 Adabas CPU	.98 / second	.95 / second
IBM 9672 TSO CPU	.98 / second	.95 / second

Effective February 1, 2000

Agencies are gradually increasing the amount of server and pc data they are storing. As a result, ITD will further reduce the LAN Back-up Storage rate effective on the February Data Processing Billing, distributed in March.

	Old Rate	New Rate
LAN Back-up Storage	3 cents per megabyte	1 cent per megabyte

Based on current usage, this rate reduction will result in a savings to state agencies of $10,800 per month or $226,800 for the 1999-2001 biennium.

Current Projects

ITD is in the process of removing a mainframe software product called ROSCOE and will migrate to a product called TSO. Another project is removing a product called Dispatch and migrating to OnDemand. Both are expected to be completed by May 17, 2000 and will save over $96,000 per year. At the time of our next processor upgrade, ITD would have to spend an additional $200,000+ for these 2 products to upgrade the licenses for the new machine. These savings will be passed on to the agencies in the months to come.

Telecommunication Services

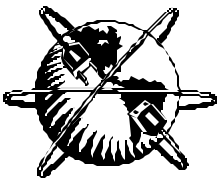
TOKEN RING TO ETHERNET CONVERSIONS

Kim White

ITD's direction of converting all token ring networks to Ethernet is progressing as planned. We are currently working in the judicial wing on the second floor. The basement and first floor have been completed. If the schedule can be kept, we will be finishing up the third floor by the end of March or early April.

Plans are being started for the Bank of North Dakota and Workers Compensation Bureau, two of the larger networks in State Government.

We are also converting smaller networks as time and resources permit. If you would like to get scheduled, please contact Kim White at kwhite@state.nd.us or 701-328-4675. I will try to answer any questions you might have about the process or procedures.



CONSTANT CHANGES IN INFORMATION TECHNOLOGY

Tim DeGraff

To anyone in the information technology profession, changes are just another fact of life. They happen with regularity and without regard to our desires. Our state network is no different. Changes in technology make good design practices obsolete every couple of years.

Initially the state network was designed in a geographical manner. IP addresses were assigned based on where you were physically located and were shared by Higher Education. The State matured technologically and we were able to obtain our own IP address space. Addresses were still assigned based on location, but we were now using our own addresses and our own domain name servers.

Technology changed with the addition of frame relay making it possible to design our network around each separate department. In other words, each department had its own router that its remote offices fed into. IP address space was allocated to follow that practice. At that point, some offices were still using the old addressing scheme and some were using the new. As departments made changes to remote offices, we could change their addressing to match the new method, but we were never able to completely update each department.

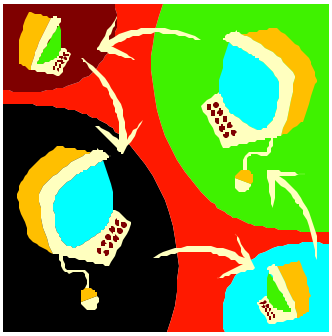
Technology has matured further, and now we are able to collapse more data across higher speed frame-relay circuits. So once again it makes sense to assign address space based on location. The problem this has created is that our IP address space has become so fragmented that our routers spend extra cycles determining where to send each packet.

Throughout this process, other changes have become necessary. We added a firewall, changed our DNS servers, added WINS, and expanded the NDSTATE domain. With each change and new service, our network becomes more reliant on consistent network information on each PC. In order to bring that consistency to our network, we are in the process of helping to set each device connected to the network to DHCP.

This allows us the ability to change the IP address space of an office by asking the end users to power cycle their machines at a given time. It enables us to give out updated DNS addresses "on the fly" rather than spread out over a 2 year period.

We have developed a plan that will convert different areas of the state to DHCP on a scheduled basis. Making use of ITD staff, staff from other agencies, and contracted personnel, we plan to have all devices converted by the end of June 2000.

Please contact me at 328-1940 if you have any questions about this process.



WINDOWS 2000 INFORMATION
Kenn Schroeder

During the week of February 14, 2000, Information Technology Department (ITD) sent three of our Network Administrators to an accelerated Windows 2000 course. During this one week course, the three network administrators covered a variety of topics dealing with Windows 2000. These topics ranged from the initial planning of the deployment to the migration from our current Windows NT domain.

There are two major areas of concern with the migration process that lay ahead for the State of North Dakota. They are:

1. The time frame in which Microsoft plans to stop supporting Windows NT.
2. The impact on the State of North Dakota's computer network regarding the deployment of Windows 2000 servers.

The first area of concern is support for the Windows NT 4.0 platform. During the training session, a statement was made that Microsoft only planned to support NT 4.0 until December 31, 2000, with no service packs or fixes to be released after that date. This statement seems to be overly optimistic about the rate of implementation of this platform and we have been unable to find a formal Microsoft document or policy that supports this statement. However, should this statement prove to be true, it does not leave agencies much time to migrate to Windows 2000 if they wish to operate on a supported platform.

Of more immediate concern is coordinating the migration and deployment of this platform within the State network. One of the features built into Windows 2000 Server is smart technology. This allows a server to check the local or wide area network for other Windows 2000 servers as they are installed. This feature presents a major complication for the State network if an agency other that ITD would be the first to deploy a Windows 2000 Advanced Server. When a server is deployed, it checks the network for any other Windows 2000 servers. If it finds that it is the first server on the network, it will set itself up as a domain controller installing several server features including Global Catalog Services, DHCP, DNS, Active Directory, and several other services. This new server would then become the root server for the new Windows 2000 infrastructure. If this root server is not an ITD server, there will be an immeasurable amount of extra work to migrate the current NDSTATE domain to Windows 2000. If you plan on deploying a Windows 2000 Advanced Server before July 1, 2000, please try to coordinate your deployment with ITD.

Agencies might also want to consider joining the NDSTATE domain before deploying any Windows 2000 servers. Initial testing has indicated that the migration process for agencies wishing to join the NDSTATE domain after they have deployed Windows 2000 servers will be more difficult than it was on the NT 4.0 platform.

During the first two weeks in March, ITD set up a Windows 2000 test lab that will be modeled after the current NDSTATE domain. We will test the migration to Windows 2000 and try to identify any potential issues or problems associated with the migration. If you have any questions, please contact Kenn Schroeder at 328-1932 or Kory Hellman at 328-1012.

THE DOMAIN NAME SERVICE AND WINDOWS 2000
Jeff Carr

When we access an individual computer or service on the State network or the Internet, we instruct our computer to connect to ranch.state.nd.us or www.yahoo.com. These names, while convenient for us to remember are of no meaning to our computers. Left to their own devices, our computers cannot connect to either ranch.state.nd.us or www.yahoo.com. They do not, by themselves, know the IP address for either ranch.state.nd.us or www.yahoo.com. The Domain Name Service, or DNS, serves to provide the needed information. When we use our browser to connect to www.yahoo.com, our computer asks a DNS server for the IP address. Having discovered the IP address, our browser forms the needed connection. Without the information provided by the DNS system, our browser will be unable to find the web site. This fact makes the DNS system the single most important service offered by either the State network or the Internet. All the other services offered depend upon the normal function of DNS. If DNS is not functioning normally, e-mail can't be sent, web sites can't be browsed, 3270 sessions to Ranch fail, connections to an Oracle database will be unsuccessful, etc. Clearly, the stability and proper configuration of DNS is a prerequisite for any network.

Microsoft Windows Networking uses both DNS and an additional name service, WINS (Windows Internet Naming Service), to provide the required translation of computer names into IP addresses. While this dual naming system works, it does create an extra administrative burden when managing a Windows network. Both DNS and WINS servers must be purchased, installed, and maintained. When designing Windows 2000, Microsoft wished to reduce this administrative burden and Windows 2000 Active Directory is their solution. When run in pure Active Directory mode, a Windows 2000 server/client uses DNS, and only DNS, for all of its name resolution needs. This will ultimately make WINS a thing of the past and that is a good thing.

While reducing the number of name services will reduce the administrative burden on maintaining a Windows network, it does require special configuration of the DNS servers to support the new functionality offered by Windows 2000 Active Directory. Without this special configuration, Active Directory simply will not work. For this reason, it is absolutely critical that you inform ITD prior to installing Windows 2000. If the state-wide DNS servers are ignorant of the existence of your Windows 2000 servers/clients, you will have created a trouble shooting nightmare for yourself.

Windows 2000 presents additional challenges for a successful deployment and the changes in DNS configuration are one of these. The article by Kenn Schroeder located above this article describes some of these challenges. If you have further questions about Windows 2000, please contact Kenn at 328-1932.

Software Development Services

E-GOVERNMENT TEAM
Vern Welder

North Dakota State Government has been conducting business/commerce electronically for many years. Today's electronic government focus is on conducting government business via the World Wide Web. Now it has a name, 'e-government.' ITD has created an e-government team, or E-Team, whose focus is to create and maintain the infrastructure and applications that exploit the World Wide Web as the information transport.

The E-Team consists of application developers, a database analyst, a web page designer, and a telecommunications network/security specialist. Projects completed by the E-Team include: Secretary of State's Contractors List, ITD's IT Planning System, State Procurement Office's Requisition System, and Game and Fish's Harvest Information Program. Marlys Jangula is the E-Team manager. To explore e-government possibilities for your agency, contact Marlys at 328-3198 or mjangula@state.nd.us.

CONVERTING FROM ROSCOE TO TSO
Vern Welder

ITD will be discontinuing the use of Computer Associates' ROSCOE software as our mainframe text editor in May 2000. The replacement product is IBM's TSO (Time Sharing Option) product. All ROSCOE procs will be replaced with TSO/ISPF panels or other methods of performing the functions required by ITD's development staff and our customers.

The ROSCOE to TSO conversion started on February 22 with a week of planning and staffing activities. The project is staffed with five consultants and three full-time ITD staff. Several individuals have been assigned to provide part-time and advisory roles. ITD customers affected by this conversion will be contacted to address conversion and training issues.

TEAM MOVING TO NORTHBROOK
Vern Welder

ITD's 'Looney Tunes' software development team is in the first phase of moving to a Northbrook Mall office. Their office space in Northbrook Mall is being prepared for occupancy so the team is temporarily located in the committee clerk room above the Senate Chambers. The 'Looney Tunes' will be joining two other ITD software development teams that are currently located in Northbrook Mall.

NEW SYSTEMS DEVELOPMENT MANAGER
Vern Welder

ITD Software Development has a new Systems Development Manager. Dennis Elhard joined ITD on February 28. Dennis is taking over Marlys Jangula's duties as she transitions to manage ITD's electronic government team. Doran Eberle will continue to serve as the Systems Development Manager for Human Services' applications.

GEOGRAPHIC INFORMATION SYSTEM (GIS)
Vern Welder

The ND Geographic Information Systems Technical Committee (GISTC) asked ITD to determine how the GIS systems and processes in State Government can be leveraged to best serve state agencies' and the general public's needs. To fill that request, ITD has retained the Convergent Group to study GIS and make a recommendation on how GIS can be organized to provide the most benefit. The GIS study report is due in early April 2000. Watch for it on the ITD home page at http://www.state.nd.us/itd. Click on 'Current Initiatives,' then click on the GIS link.

Computer Services

COMPUTER SERVER OUTAGES
Dean Glatt

When you hear the word downtime, it conveys a negative image that suggests we are having computer problems. When you hear the word uptime, it suggests that we are using a play on numbers and trying to dodge the downtime issue! Actually, both are relevant to us and I feel both need some slight explanation. Downtime is tracked for both planned and unplanned outages. *Planned* outages are generally predetermined outages in which maintenance is performed on the system which requires it to be off-line. Unplanned outages are generally the result of us turning off the wrong power switch. Actually, I'm just seeing if you are paying attention. *Unplanned* outages on our servers are generally the result of hardware failures or operating system failures. Today's operating systems have millions of lines of instructions. Unpredicted failures are generally caused by some combination of instructions conflicting that were not possible to predict when the systems were developed. The Windows 2000 operating system actually has more lines of code than our mainframe server operating system!

We measure outages based on a 24-hour period since we have applications that require round-the-clock availability, such as our medical and law enforcement agencies. Another appropriate measurement is the period from 7 am to 6 pm for applications that are generally required only during regular working hours. These systems have the luxury of being brought down for maintenance anytime after hours.

The time is here however, that ITD is pressed with the demand to have all of our "small" systems on-line 24 hours a day,

ITD EMPLOYEE PROFILE

Name: Bill Laber
Job Title: Computer Systems Administrator
Section of ITD: Tech Services
Job Responsibilities: Setup and support NT servers maintained by ITD, including the State web server, real audio server, exchange e-mail, Notes e-mail on NT, etc.
Years at ITD: 3 years

365 days a year because of round-the-clock internet usage. With that in mind, we have started implementing redundant hardware by doubling and even tripling the amount of computer servers that we have in our shop to achieve this goal. In a redundant environment, such as our MS Exchange mail system, a primary server can be brought down for maintenance while the fail-over system keeps the mail system on-line. As operating systems become more stable, which is what we are hoping Windows 2000 will do for many of our servers, our availability will become even better.

Incidentally, our 1999 S/390 mainframe server *planned* outages amounted to 116.2 hours for a total system uptime of 99.98% for the year. These outages are usually performed on Sundays. *Unplanned* outages in which the entire system was unavailable amounted to roughly 5 hours and there were several incidents where specific applications were unavailable while the rest of the applications were online.

Information Technology

MICROSOFT SELECT PURCHASE AGREEMENT

Dennis Klipfel

ITD has been assisting the State Procurement Office of the Central Services Division in establishing a state purchase agreement for Microsoft products under the Microsoft Select program. This program will provide for the direct purchase of Microsoft products by agencies at a reduced price from a designated reseller.

The MS Select program is a volume software licensing program designed to reduce the cost of software and make it easier and quicker to obtain properly licensed software. A Select agreement has four price level options. Each price level is tied to a purchase forecast for a two-year period. Based on projected State of North Dakota purchase volume, our agreement will be at the lower volume levels.

The software products are pooled into three groups: applications, systems, and servers. A separate price level is established for each group based on the purchase forecast for that group. Purchases in one group, however, can't be used to count toward the volume forecast of another pool.

Not all product price discounts are the same, but the discounts range from approximately 20% to 50%. The final price schedule has not yet been established, as the reseller could provide additional discounts. A limitation is that the only resellers authorized to participate in a Select purchase agreement are those designated as Microsoft large account resellers.

When the agreement is in place, an order may be issued directly to the reseller and the software is on its way to the agency. The software is quickly available to the agency, the agency is assured of a legitimate license, and it should see additional savings on its software purchases. Agencies also have quick access to trial copies of software and may purchase a software upgrade protection option to ensure upgrades to their current software.

The reseller is also expected to have a web site to provide additional on-line services. Due to the state purchase order requirements, the actual online purchase of software may be somewhat limited, but this too is being worked on.

The effective date of the Select agreement is expected to be about the middle of April. Agencies are encouraged to hold any major software purchases until after the Select agreement is in effect. However, requests for Microsoft software purchases prior to the implementation of the Select agreement will not be denied or delayed.

CORPORATE TECHNOLOGIES TO PROVIDE PC AND LOCAL AREA NETWORK SUPPORT

Mike Ressler

On March 1, Information Technology Department signed a contract with Corporate Technologies to assist ITD in providing pc and local area network support for state agencies. The response from our last customer survey stated the agency need for additional support in this area. The contract will provide a guaranteed 1,000 hours of resources to be used by ITD during the next year. If the demand is greater than the current contract commitment, we can request additional resources. If your agency is not using ITD for this support and you would like to start, please contact Lynette Goroski at 328-2153. ITD charges $45 per hour for this desktop support service.

ORACLE CORPORATION STATEWIDE CONTRACT

Mike Ressler

Information Technology Department is working with Oracle Corporation to enter into a statewide contract. The contract, when signed, will guarantee a 40% discount off future software license purchases along with annual maintenance fees. However, the State must commit to spending $1,200,000 (list price) over the next year. The State has a couple of large projects that may include Oracle software and, if so, would account for the majority of this commitment amount. If your agency is considering the purchase of Oracle licenses in the near future or you have any questions, please contact Mike Ressler at 328-1001.

RECORDS RETENTION SCHEDULES AVAILABLE ON THE WEB

Becky Lingle

State agencies can now view their records retention schedules at http://www.state.nd.us/itd/records/recordshome.html. This feature requires Adobe Acrobat Reader. If you need to download Reader, go to the State Forms link on the Records Management home page.

GENERAL RETENTION SCHEDULE UPDATES

Becky Lingle

The General Retention Schedule distributed to state agencies late last year has been working great. We received a few suggestions to improve the retention schedule and add some additional record series to the schedule. The records coordinator in each agency should be receiving a list of potential record series to be added to the General Retention Schedule toward the end of April.

RECORDS MANAGEMENT AND RISK MANAGEMENT - WORKING TOGETHER FOR STATE GOVERNMENT

Becky Lingle

ITD Records Management was asked to participate in the Annual Risk Management Seminar on April 13-14. "Your Records Retention Process - Harmful or Helpful?" will include sessions on the use of electronic evidence in litigation, the litigation process, e-mail uses and misuses, records management, e-mail systems, and electronic records retention.

We are very fortunate to have Mr. John Jessen as the keynote speaker. Mr. Jessen is the president and CEO of Electronic Evidence Discovery, Incorporated in Seattle, Washington.

If you would like more information or would like to register, contact Renae Schumacher from the Risk Management Division at 328-6514 or rschumac@state.nd.us.

INFORMATION LINK is published quarterly by the North Dakota Information Technology Department.

Anyone interested in contributing information or would like to be added to the mailing list should contact the editor at North Dakota Information Technology Department, 600 East Boulevard Ave Dept 112, Bismarck, ND 58505-0100, (701) 328-3190. FAX: (701) 328-3000.

http://www.state.nd.us/itd/

Chief Information Officer: Curtis Wolfe
Editor: Becky Lingle
Newsletter Committee: Darlene Wolfgram

INFORMATION LINK
Information Technology Department
600 E Boulevard Ave Dept 112
Bismarck, ND 58505-0100